

CLAIMS

I claim:

1. A modified system for balancing soft tissue intraoperatively during joint arthroplasty, the system being of the type having a first joint trial having an articulating surface, a second joint trial having an articulating surface, a flexible sensor array capable of being shaped to define a curved contour, the sensor array being capable of generating a signal in response to pressure, and a protector having a curved contoured articulating surface and being capable of transmitting pressure to the sensor array,
5
10 the modified system comprising:
complementary mounting members associated with the protector and one of the trials for temporarily securing the sensor array between the protector and the trial;
wherein the sensor array is removable from protector and trial without damaging the sensor array; and
15 wherein the complementary mounting members limit movement of the protector with respect to the associated trial in use so that the position of the articulating surface of the protector is fixed relative to the articulating surface of the associated trial during use.
2. The modified system of claim 1 wherein the protector comprises a first portion
20 and a second portion joined along an axis, and wherein the first portion of the protector is bonded to the articulating surface of one of the trials and the second portion is pivotable about the axis to a position overlying at least a substantial part of the sensor array.

3. The modified system of claim 1 wherein the complementary mounting members comprise a stud and an aperture.

4. The modified system of claim 1 wherein the complementary mounting members allow the trial and protector to be snap fit together with the sensor array
5 between the protector and the trial articulating surface to temporarily combine the protector, sensor array and trial into an assembly for use.

5. A modified system for balancing soft tissue intraoperatively during joint arthroplasty, the system being of the type having a first joint trial having an articulating surface, a second joint trial having an articulating surface, a flexible
10 sensor array capable of being shaped to define a curved contour, the sensor array being capable of generating a signal in response to pressure, and a protector having a curved contoured surface and being capable of transmitting pressure to the sensor array,

the modified system comprising:

15 mating members associated with the protector and one of the trials for temporarily fixing the position of at least part of the protector with respect to the trial;

wherein the sensor array is temporarily in a fixed position between the protector and the trial articulating surface; and

wherein the sensor array is free from adhesive.

6. The modified system of claim 5 wherein the mating members comprise a recess and a protrusion.

7. The modified system of claim 5 wherein the protector comprises a first portion and a second portion joined along an axis, and wherein the first portion of the
5 protector is bonded to the articulating surface of one of the trials and the second portion is pivotable about the axis to a position overlying at least a substantial part of the sensor array.

8. The modified system of claim 5 wherein the mating members comprise a stud and an aperture.

10 9. The modified system of claim 5 wherein the trial and protector are capable of being snap fit together with the sensor array between the protector and the trial articulating surface to temporarily combine the protector, sensor array and trial into an assembly for use.

10. A modified system for balancing soft tissue intraoperatively during joint
15 arthroplasty, the system being of the type having a first joint trial having an articulating surface, a second joint trial having an articulating surface, a flexible sensor array capable of being shaped to define a curved contour, the sensor array being capable of generating a signal in response to pressure, and a protector having a curved contoured surface and being capable of transmitting pressure to the sensor
20 array,

the modified system comprising:

a stud extending between the protector and one of the trials for temporarily fixing the position of at least part of the protector with respect to the trial.

11. The modified system of claim 10 wherein the protector comprises a first
5 portion and a second portion joined along an axis, and wherein the first portion of the protector is bonded to the articulating surface of one of the trials and the second portion is pivotable about the axis to a position overlying at least a substantial part of the sensor array and wherein the stud extends from the second portion of the protector toward the articulating surface of the associated trial.

10 12. A modified system for balancing soft tissue intraoperatively during joint arthroplasty, the system being of the type including a first joint trial having an articulating surface, a second joint trial having an articulating surface, a flexible sensor array associated with one of the trials and capable of being shaped to define a curved contour, the sensor array being capable of generating a signal in response to
15 pressure, and a protector having a curved contoured surface and being capable of transmitting pressure to the sensor array,

the modified system characterized in that:

the sensor array is positively located with respect to at least one of the protector and associated trial; and

20 the sensor array is separable from the associated trial and the protector both before and after use.

13. The modified system of claim 12 wherein the protector and at least one of the joint trials have mating positioning members.

14. The modified system of claim 13 wherein the mating positioning members comprise a recess and a protrusion.

5 15. The modified system of claim 13 wherein the mating positioning members comprise an aperture and a stud so that the protector can be snap fit to the trial.

16. The modified system of claim 12 wherein the protector has a first portion and a second portion joined along an axis, wherein the first portion of the protector is bonded to the articulating surface of one of the trials and the second portion is
10 pivotable about the axis.

17. The modified system of claim 12 wherein the protector is capable of being snap fit to one of the trials with the sensor array between the protector and the trial articulating surface to temporarily combine the protector, sensor array and trial into an assembly for use.

15 18. In a system for balancing soft tissue intraoperatively during joint arthroplasty wherein the system has a first joint trial having an articulating surface, a second joint trial having an articulating surface, a flexible sensor array capable of being shaped to define a curved contour, the sensor array being capable of generating a signal in

response to pressure, and a protector having a curved contoured surface and being capable of transmitting pressure to the sensor array,

a method of sterilizing and assembling the system comprising:

providing the sensor array and the protector as discrete elements;

5 sterilizing the sensor array and the protector as discrete elements; and

mechanically fixing the position of at least a portion of the protector with respect to one of the trials with the sensor array in a fixed position and substantially covered by at least part of the protector after the sensor array and the protector have been sterilized.

10 19. The method of claim 18 wherein the act of mechanically fixing the position of at least a portion of the protector to one of the trials comprises snap fitting complementary mounting members together.

20. The method of claim 19 wherein the complementary mounting members comprise a stud into an aperture.

15 21. The method of claim 18 wherein the protector and sensor array are held together as an assembly by a mechanical connection.

22. The method of claim 18 wherein the protector has first and second portions joined along an axis, the method further comprising bonding the first portion of the protector to the trial before sterilizing the protector while leaving the second portion
20 capable of pivotal movement about the axis, and wherein the act of mechanically

fixing at least a portion of the protector to one of the trials comprises inserting the sensor array between the first and second portions of the protector and then securing the second portion of the protector to the trial with the second portion extending over at least a substantial part of the sensor array.

- 5 23. In a system for balancing soft tissue intraoperatively during joint arthroplasty wherein the system has a first joint trial having an articulating surface, a second joint trial having an articulating surface, a flexible sensor array capable of being shaped to define a curved contour, the sensor array being capable of generating a signal in response to pressure, and a protector having a curved contoured surface and being
- 10 capable of transmitting pressure to the sensor array,

 a method of sterilizing and assembling the system comprising:

 providing the sensor array and the protector as discrete elements;

 sterilizing the sensor array and the protector as discrete elements; and

 mechanically fixing the position of the curved contoured surface of the

- 15 protector relative to the articulating surface of one of the trials with the sensor array between the curved contoured surface of the protector and the articulating surface of the trial.

24. The method of claim 23 wherein the act of mechanically fixing the position of the curved contoured surface of the protector to the articulating surface of one of the
- 20 trials comprises fitting complementary structures together.

25. The method of claim 23 wherein the complementary structures comprise a stud and an aperture.

26. The method of claim 23 wherein the protector and sensor array are held together as an assembly by a mechanical connection.

5 27. The method of claim 18 wherein the protector has first and second portions joined along an axis, the method further comprising bonding the first portion of the protector to the trial before sterilizing the protector while leaving the second portion capable of pivotal movement about the axis, and wherein the act of mechanically
10 fixing at least a portion of the protector to one of the trials comprises inserting the sensor array between the first and second portions of the protector and then securing the second portion of the protector to the trial with the second portion extending over at least a substantial part of the sensor array.